APPENDIX 3.1

MEMORANDUM TO: Executive Heads of Provincially-Assisted Universities, OCA, Algoma and Hearst

Information copies to: COU, CFSO, OCUFA, COUSA, OEICC, CUEW, FOETC, OPSEU

FROM: David Trick

DATE: November 8, 1996

SUBJECT: **Program Approvals Process**

I am writing further to the Minister's letter of May 29, 1996 announcing the closing of the Ontario Council on University Affairs (OCUA) and the Academic Advisory Committee (AAC). At that time, you were advised that the Ministry was reviewing the program approvals process to determine how it would be handled without the involvement of these two bodies. I am pleased to advise you that an interim process of self-administered regulation will replace the current program approvals process for the 1996-97 academic year.

The key features of the new process are:

- self-administered regulation by each university;
- a focus on new programs rather than those that are simply restructured or rationalized;
- a streamlined and standardized set of criteria to be used by universities in evaluating program proposals;
- an exemption on undergraduate core Arts and Science programs from review, as in the past;
- a simplified reporting process; and,
- final determination by the Minister on whether enrolments in new programs are approved for the purposes of funding, as is the case at present.

The Minister has accepted OCUA's recommendation to streamline and standardize the existing evaluative criteria. Group A and B undergraduate and Group C graduate programs (see a Attachment 1) will all be reviewed against the following seven criteria:

.../2

1. Certification that the program has undergone a nomenclature confirmation review by the University Senate for Group A and Group B undergraduate programs and by the Ontario Council on Graduate Studies (OCGS) for Group C graduate programs.

2. Certification of program quality by the University Senate for Group A and Group B undergraduate programs and by the Ontario Council on Graduate Studies (OCGS) for Group C graduate programs.

3. Certification by the governing body of the institution that the program can be financed by institutional resources or that the Minister has given prior approval of additional funding to cover any portion of program costs that cannot be absorbed by the institution.

4. Certification by the executive head that the program is consistent with the aims, objectives and existing strengths of the institution.

5. Certification by the executive head that there is convincing evidence of student demand.

6. Certification by the executive head that there is convincing evidence of societal need.

7. Convincing evidence that any duplicative similarities to existing programs in Ontario or Canada are justifiable for reasons of public funding.

More details regarding the information universities should consider in certifying the criteria have been met are attached (see Attachment 2).

Institutions must certify to the Ministry that the proposed new program meets criteria 1-6 (see Attachment 3). For graduate programs, certification by OCGS that the proposed new program meets criteria 1 and 2 must also be provided by the institution.

The Ministry will evaluate criterion 7. The Ministry will seek comments related to this criterion from institutions on new undergraduate program proposals.

New program developments which are products of restructuring/rationalization or based on existing programs need only be reported each Spring to the Ministry. Institutions will also be asked each Spring to report other annual program developments including program closures and mergers.

.../3

Additional information will be obtained annually by the Ministry from OCGS on the quality appraisal of new and existing graduate programs and from the Undergraduate Program Review Audit Committee (UPRAC) on the results of its audits.

All programs to be reviewed within the 1996-97 approvals cycle should be submitted on or before December 15, 1996. For those institutions who have already submitted programs, please complete the attached certification form (see Attachment 3). Program submissions and any questions should be directed to the attention of :

The Director, Universities Branch
Postsecondary Education Division
Ministry of Training Colleges and Universities and Training
9th Floor, Mowat Block
900 Bay St.
Toronto, Ontario
M7A 1L2
(416) 325-1952

In making this decision, the Minister has acknowledged with thanks the Academic Advisory Committee for its hard work and the input it provided on the revised process. I too would like to thank the members of the Committee for the important and substantial contributions they have made to the quality of academic programs at Ontario's universities.

Original signed by

David Trick
Assistant Deputy Minister
Postsecondary Education Division

APPENDIX 3.1 (ATTACHMENT 1)

PROGRAM APPROVAL CATEGORIES
Undergraduate "Core" Arts and Science, "Group A" & "Group B";
And Graduate "Group C"

"Core" Arts and Science

Programs that are in basic disciplines which might be expected to be offered at any university...(and are) appropriate to the academic ethos and character of any university.

Biological Sciences (including Biotechnology)
English Language & Literature
French Language & Literature
General Arts and Science
Humanities (including ancient and classical languages)
Mathematical Sciences & Computer Studies
Physical Sciences
Social Sciences (including Women's Studies)
Theology

Group A

Professional

Agriculture
Architecture
Dental Surgery
Dentistry
Education
- Primary - Junior
- Junior - Intermediate
- Intermediate - Senior
- Technological Studies
- French as a First Language (FFL)

Engineering
Forestry
Forest Technology
Horticulture
Journalism
Landscape Architecture
Law
Library Science
Medicine
Midwifery
Nursing
Nursing Education
Occupational Therapy, Physiotherapy and Physical Therapy
Optometry
Pharmacy
Social Work
Veterinary Medicine

Group B

Accounting, Accountancy
Actuarial Science
Agricultural Business
Area Studies
Art Education, Conservation, Art Therapy
Clothing, Textiles, Design and Fashion
Commerce
Community, Urban and Regional Planning
Criminology
Communications
Dance
Dietetics
Drama
Environmental Studies, Environmental Science
Family Studies, Family Science
Film, Cinema
Finance
Fine Art, Studio Art, Painting
Gerontology
Health Studies
Home Economics, Food Studies
Industrial, Labour Relations
Kinesiology
Labour Studies
Language and Literature Studies
Law Enforcement
Legal Studies
Linguistics
Management, Business Management
Marketing
Medical Illustration
Municipal Administration
Music
Native Studies
Personnel and Administrative Studies
Pharmacology
Physical Education
Planning
Public Administration
Public Service Studies
Recreation
Resource Management
Survey Science
Systems Design
Theatre Arts
Translation, Interpretation
Urban Studies, Urbanism
War Studies

Group C

All graduate programs

APPENDIX 3.1 (ATTACHMENT 2)

Information the University Should Consider in Certifying Criteria Have Been Met

Criteria	Institutional Check List
Program Nomenclature ("Truth-in-Advertising")	▸ the University Senate or equivalent academic body should ensure that the program name and degree designation are appropriate to program content and consistent with current usage in the discipline
Academic Quality	▸ Undergraduate: the University should ensure that the Senate or equivalent academic body has approved the undergraduate program ▸ Graduate: the University should ensure that the Dean of Graduate Studies (or equivalent) has received a letter indicating the date program passed OCGS appraisal without requiring improvements
Financial Viability	▸ the Board of Governors or equivalent body should ensure the university has in hand the requisite resources to introduce the program within existing funding levels and is prepared to maintain the program for a reasonable period of time (The approval of a program is **not** grounds for a request for additional funding from the Ministry to initiate or sustain the program) ▸ where there is an increase in the minimum length of time required to complete an existing approved degree program, the institution should be able to justify the additional costs incurred to the institution, government and the student In making these determinations, institutions should consider: ▸ the impact of the program on funding and how the institution intends to finance and staff the proposed program ▸ the additional costs (capital expenditures, additional faculty, etc), and the sources of additional funds (external grants, donations, government grants) ▸ how other programs will be affected (joint offerings, closure, rationalization, decreased in size, etc.), including how and whether or not any cost savings will be involved.
Institutional Appropriateness	▸ the university should ensure the program is related to institutional mission, academic plans, and/or departmental plans ▸ the university should ensure the program fits into the broader array of program offerings, particularly areas of teaching and research strength, collateral areas of study, etc. In making these determinations, institutions should consider: ▸ notable resources available to the program demonstrating institutional appropriateness e.g. Chairs, institutes, centres; unique library collections or resources; facilities such as computer, laboratory, other acquisitions, etc. ▸ external financial support demonstrating strength such as facility/equipment donations, other external donations, grants, etc.

APPENDIX 3.1 (ATTACHMENT 2)

Information the University Should Consider in Certifying Criteria Have Been Met

Criteria	Institutional Check List
Student Demand	▸ the University should ensure there is convincing evidence of student demand for the program In making these determinations, institutions should consider: ▸ projected enrolment levels for the first five years of operation (If the program is in operation, use actual and projected data) ▸ intended steady-state annual enrolment and steady-state total enrolment projections and the year(s) in which they will be achieved ▸ evidence of student demand through application statistics, for example: number of enquiries, applications received, number of qualified applicants, use of macro-indicator data (graduate only) ▸ origin of student demand (% domestic and visa students; graduate only - the undergraduate or master's programs from which students would be drawn) ▸ duration of the projected demand (e.g. short, medium or long-term demand from specified sources) ▸ evidence of review and comment by appropriate student organization(s)
Societal Need	▸ the University should ensure there is convincing evidence that graduates of the program are needed in specifically identified fields (academic, public and/or private sector) ▸ for professional program areas, the university should ensure congruence with current regulatory requirements of the profession In making these determinations, institutions should consider: ▸ dimensions of the societal need for graduates (e.g. socio-cultural, economic, scientific, technological) ▸ geographic scope of the societal need for graduates (e.g. local, regional, provincial, national) ▸ trends in societal need for graduates ▸ duration of the societal need (e.g. short, medium, or long-term) Examples of evidence for the above would be: ▸ letters from a variety of potential employers of graduates who have seen the curriculum and commented upon the need for graduates within their organization and, more broadly, in their field of endeavour ▸ professional society and/or association comments about the need for graduates based on a review of the curriculum ▸ employment surveys, survey of the number of positions advertised in, for example, the CAUT Bulletin, AUCC University Affairs, etc. ▸ statistics related to the number of Ontario students leaving the province to study in the same field elsewhere in Canada or abroad

APPENDIX 3.1 (ATTACHMENT 2) Information the University Should Consider in Certifying Criteria Have Been Met	
Criteria	**Institutional Check List**
Duplication	▸ the University should indicate innovative and distinguishing aspects of the program ▸ the University should provide evidence of justifiable duplication based on societal need and/or student demand in cases where there are programs in the system that are the same or similar (Comments from other institutions regarding the proposed new program will be sought by the Ministry. Comments regarding Health Science programs will also be sought from the Ministry of Health) ▸ the University should indicate why the institution is offering the program on a "stand-alone" basis rather than merging its resources with another institution in a joint program

APPENDIX 3.1 (ATTACHMENT 3)

Program Approvals Certification Form

_____

Program Name and Degree Designation **Institution**

(Please attach the Program's Calendar Entry)

The university certifies that the following six criteria have been evaluated and met for the above proposed new program:

- ❑ The program has undergone a nomenclature confirmation review by the University Senate for Group A and B undergraduate programs and by the Ontario Council on Graduate Studies for Group C graduate programs.

- ❑ Senate has certified program quality for Group A and B undergraduate programs and the Ontario Council on Graduate Studies has done so for Group C graduate programs. **(For graduate programs please attach a copy of OCGS approval)**

- ❑ The governing body of the institution has certified that the program can be financed by institutional resources unless the Minister has given prior approval of additional funding to cover any portion of program costs that cannot be absorbed by the institution.

- ❑ The program is consistent with the aims, objectives and existing strengths of the institution.

- ❑ There is convincing evidence of student demand.

- ❑ There is convincing evidence of societal need.

The university submits the attached information as evidence that any duplicative similarities to existing programs in Ontario or Canada are justifiable for reasons of public funding.

_____

(Signature of President)

_____

(Date)

MTCU Faxback

19___-___ Program Developments Report

Institution:_____ Institutional Contact:_____

Telephone Number:_____

A. New Programs

Program Name	Degree Designation	Date Effective	Additional Information

B. Rationalized / Restructured Programs

Program Name	Degree Designation	Date Effective	Additional Information (e.g. existing program based on)

C. Merged Programs / Departments

Program/Department Name	Degree Designation	Date Effective	Additional Information (e.g. existing program/department based on)

D. Closed Programs

Program Name	Degree Designation	Date Effective	Additional Information

Please faxback your response to: B.J. Mackay, Director, Universities Branch
416-325-1959
(Relevant calendar copy information should also be provided.)

APPENDIX 4.0 Enrolment Audit

The Ministry of Training, Colleges and Universities requires an audit of the enrolment data of institutions which are eligible for support under the Ontario formula for operating grants and under the program of support for church-related universities and colleges. The objective of the audit shall be to render an audit report in the prescribed form.

1. Responsibility of Auditors

Auditors are responsible for providing an opinion on institutions' enrolment reports to the Deputy Minister of Training, Colleges and Universities in keeping with the spirit of Section 5805 of the CICA Handbook--Special Reports, explaining an audit opinion on financial information other than financial statements:

AUDITOR'S REPORT

TO: THE DEPUTY MINISTER OF TRAINING, COLLEGES AND UNIVERSITIES

At the request of (*name of institution*) we have examined the attached enrolment reports totalling (*number*) basic income units and formula fees of $ (*amount*) for the academic year 19 ___/___ which have been submitted to us by the Ministry of Training, Colleges and Universities. Our examination was made in accordance with generally accepted auditing standards, and accordingly included a general review of the records and procedures by which the above enrolment reports were prepared and such tests of the records of *(name of institution)* and other supporting evidence as we considered necessary in the circumstances.

In our opinion, the attached enrolment reports present fairly the weighted enrolment and formula fees of (*name of institution*) for 19 ___/___ for funding purposes, in accordance with instructions issued by the Ministry of Training, Colleges and Universities in the most recent edition of the "Ontario Operating Funds Distribution Manual," dated (*month*), 19 ___/___ and "Essential Notes and Reporting Instructions," dated (*month*), 19 ___/___ or through correspondence.

City _____ (*Signed*) _____
Auditor

Date _____

If the auditor is able to complete the audit report without qualification (because adequate assurance has been obtained from the audit work that the upper limit of errors throughout the enrolment reports does not exceed the materiality limit), it will not be necessary to disclose any known or projected errors to the Ministry; reporting requirements will, in these circumstances, be fully met by the submission of a signed audit report in the prescribed form.

If, on the other hand, based upon the results of the examination, the auditor is not able to complete the prescribed report without qualification(s) then he or she shall report these findings to the Deputy Minister of Training, Colleges and Universities explaining fully the circumstances involved, and will await further direction as to how to proceed with the examination.

It is recognized that during the course of the examination the auditor may wish to seek clarification or direction in regard to such matters as ambiguities arising from applying the categorization scheme. Clarifications and interpretations of the formula for operating grants are the responsibility of the Ministry. If, therefore, the auditor wishes to consult, or to seek clarification or direction with respect to the examination, it should be done by writing to the Director, Universities Branch, Ministry of Training, Colleges and Universities.

The auditor of each reporting institution will provide the Deputy Minister of Training, Colleges and Universities with the enrolment audit report by December 31 following the conclusion of the academic year concerned and will provide a copy of all correspondence in this connection to the President (or the equivalent) of the university or college concerned.

2. Responsibility of Institutions

Each university or college must formally advise the firm of public accountants retained by it that an audit of enrolment is a condition for payment of enrolment-related operating grants and that the required examination for this purpose has been authorized. A copy of this letter should be forwarded to the Ministry, where it will serve as authorization for direct communication with the auditors.

3. Responsibility of the Ministry of Training, Colleges and Universities

The Ministry of Training, Colleges and Universities will provide the following to the auditor of each institution:

3.1 A summary of enrolment data received from the institution. (The auditor to confirm with the president and enrolment reporting officer their acceptance of it as a correct summary).

The enrolment data submitted will have been carefully reviewed and their arithmetical accuracy proven. Changes, if any, to the data submitted will have been noted and agreed to by the reporting institution.

3.2 An updated version of the "Ontario Operating Funds Distribution Manual".

3.3 An updated version of the "Essential Notes and Reporting Instructions".

4. Guidance for Auditors

Determination of appropriate procedures and the scope of the audit necessary to support an opinion is a responsibility of the auditor. In making this determination, the procedures selected will not be limited to, but should include, the following factors traditionally considered essential to any enrolment audit:

4.1 A general review of student records and related procedures to ensure their adequacy for satisfactory completion of the enrolment reports.

4.2 A choice of either statistical sampling or judgmental testing as the audit approach most appropriate in the circumstances.

4.2.1 Item 6 of this appendix provides guidance with respect to statistical sampling techniques as applied to the audit of enrolment. The Ministry has prescribed a sampling confidence level of 95% and a materiality limit of 2% (with respect to the upper limit of net overstatements). That is, the statistical results yielded by a random sample must be such as to give the auditor at least 95% confidence that the total BIU's reported on the year's enrolment reports are not overstated by a net amount of more than 2%.

4.2.2 If, instead, judgemental testing procedures are used, the auditor should be satisfied that the audit tests of BIU records provide evidence at least equivalent to that required for an unqualified opinion where statistical sampling techniques are used.

4.3 The audit should highlight any areas of ambiguity encountered in applying the formula categorization scheme or the rules for determining eligibility for funding of programs or students and obtain a satisfactory authority reference for the manner in which the institution has dealt with situations not explicitly provided for in the "Ontario Operating Funds Distribution Manual."

4.4 The audit should include an examination of the reasons for changes between enrolment as reported and as approved by the Ministry of Training, Colleges and Universities. Procedural weaknesses should be noted so that the institution with may take appropriate action to prevent their recurrence.

4.5 The audit should satisfactorily reconcile total fees computed, using reported enrolment data and the fee schedule of the institution, with academic fees as reported in the audited financial statements.

4.6 The auditor should obtain, in the prescribed form (see item 5), a certificate from the institution's registrar, attesting that (except as noted) enrolments in all programs of study offered fall within the formula categories under which they have been included. In addition, this certificate will declare that all enrolment reported is eligible for purposes of determining grant assistance except as noted in the certificate.

4.7 Four areas requiring special audit procedures are:

- formula units at the graduate level,
- study abroad courses and programs,
- eligible international student enrolment reporting and formula fees, and
- honours student differentiation criteria (when differentiated programs do not exist).

4.7.1 Item 7.1, entitled "Counting of Graduate Students--Audit Implications" (of the methods/procedures for establishing formula entitlements at the graduate level) lists some possible audit tests applicable to formula units at the graduate level. Item 7.2 provides a sample certification of graduate student status and eligibility for formula operating grant support (to be used for "verifying" some of the less auditable criteria).

4.7.2 Item 8 summarizes the information an auditor would need in order to verify the eligibility for formula funding of a student on a study abroad course or program. Institutions are required to keep on file a completed copy of this form, signed by a dean and the registrar (or their equivalents), for every study abroad course or program offered by the institution.

4.7.3 Item 9 outlines the procedures to be used by institutions and their auditors to identify international students for purposes of applying the international student fee policy and to determine conformity of institutional practice with this policy.

4.7.4 Institutions are required to keep on file a copy (copies) of the ministry's approval of the current (and/or historical) criteria used to differentiate students as honours, for reporting purposes, when differentiated programs of study do not exist. Auditors are required to attest that these criteria have been accurately applied **within the overall materiality limits of their enrolment audit**.

Institutions should obtain **written** approval from the ministry for existing criteria, and shall thereafter obtain ministry approval for any changes to such criteria. In enrolment audit reports, the auditors shall notify the ministry of any changes to existing criteria if ministry approval has not been obtained.

4.8 External auditors are required to complete a questionnaire (Item 4.8.1, following page) concerning the procedures that they have examined in conducting their enrolment audit.

4.8.1 ANNUAL ENROLMENT AUDIT QUESTIONNAIRE

TO: THE MINISTRY OF TRAINING, COLLEGES AND UNIVERSITIES

RE: _____

(Name of Institution)

AND THE ENROLMENT REPORT FOR FISCAL YEAR ENDING: _____

(TICK EITHER YES OR NO FOR EACH ITEM BELOW AND PROVIDE OTHER RESPONSES AS REQUIRED.)

1. During the course of the enrolment audit, were there any matters that you have reported, or intend to report, to the management, the audit committee, the board of governors, or governing council of your client regarding material inaccuracies or the possibility of material inaccuracies in the enrolment report?

   ☐ YES ☐ NO

   If YES, please outline what they are:

   _____

   _____

2a. Did you submit a management letter pertaining to the enrolment audit for the year prior to the year under review?

   ☐ YES ☐ NO

2b. Have all the matters in the management letter pertaining to the enrolment audit been resolved to your satisfaction?

   ☐ YES ☐ NO

   If NO, please comment:

   _____

   _____

3. Did you review the responses contained in this questionnaire with the institution?

   ☐ YES ☐ NO

NAME AND ADDRESS OF AUDIT FIRM:

_____

_____

SIGNATURE OF AUDITOR: _____

NAME OF PARTNER IN CHARGE: _____

LICENCE NUMBER: _____

(Public Accounts Council of Ontario Licence Number)

5. **Registrar's Certification**

(UNIVERSITY LETTERHEAD)

Registrar's Certification in Connection with Audit of Enrolment

To: (*Name of Auditor*)
(*Institution*) (*Session*)

Dear Sir:

In connection with your examination of the enrolment reports for (*session*) submitted to the Ministry of Training, Colleges and Universities and the records from which these have been prepared I hereby certify that to the best of my knowledge and belief:

1. That all records have been maintained in a manner consistent with the internal university procedures established for the compilation of enrolment data and that the figures shown on the enrolment reports agree with these records.

2. That there is explicit authority for inclusion of enrolments in all programs of study offered by the university within the formula categories under which they have been reported, except as noted below:

3. That all students ineligible for support under the provisions of the Ontario formula for operating grants have been excluded in determining the operating grant which has been paid.

   The numbers of such students and the programs of study in which they are enroled are as noted below:

4. That all relevant instructions and provisions applicable to the completion of the enrolment reports and the determination of the operating grants have been correctly followed.

Yours truly,

_____

_____
Title

To be signed by the Registrar (or such other university official as is responsible for completion of MTCU enrolment reports).

6. Statistical Sampling

Extracts from a letter dated October 18, 1972 from Clarkson, Gordon & Co. to Mr. F. J. Kidd, on the subject of the application of statistical sampling techniques to enrolment auditing follow.

6.1 Background

An auditor does not and cannot "certify to the accuracy" of figures in a financial statement (or enrolment report) first, because the accounting principles governing its preparation always require judgement in application and second, because it is usually completely impractical for the auditor to check 100% of the underlying transactions. Instead, the auditor bases his/her examination on tests guided by analyses of the figures, internal reconciliation of balances, review of internal control, and so on, and then reports, if appropriate, that "in her/his opinion" the financial statement (or enrolment report) "presents fairly" the financial position or other information required (such as the "weighted enrolment").

The words "in his/her opinion" imply that the auditor cannot provide 100% certainty but rather a reasonable degree of *confidence* as a result of the audit work. The words "present fairly" imply that the auditor cannot report that the financial statement (or enrolment report) is accurate to the cent but rather that (subject to the reasonable degree of confidence mentioned above) it is not misstated by a *material* amount. Any audit, therefore, implies a choice of *confidence* level and *materiality* limit. Such choices are made implicitly when an auditor employs judgemental testing procedures. (The auditor intuitively decides how *much* must be tested to be *reasonably sure* of detecting a *material error* if present). When an auditor employs statistical sampling procedures, however, the choice of confidence level and materiality limit (which in turn determine sample size) must be made explicit.

The Ministry has stated that for the purposes of the enrolment audit, the university auditor may employ *either* statistical sampling techniques *or* judgemental testing procedures. Where the nature of the enrolment records, however, permits the application of statistical sampling techniques, most university auditors will wish to consider such application seriously because of the benefits of greater objectivity to be derived therefrom. The following material is intended to indicate a method of applying such techniques.

6.2 Prescription of Confidence Level and Materiality Limit

The Ministry has prescribed a sampling confidence level of 95% and a materiality limit of 2% (with respect to the upper limit of net overstatements) where the university auditor employs statistical sampling procedures in arriving at an opinion on the reported "weighted enrolment."

6.3 Statistical sampling of BIUs

There are various different components of a complete enrolment audit: studying the system of internal control, reconciling reported academic fees to reported enrolment, sampling records of 'basic income units' (BIUs) to verify 'weighted enrolment' reflected in the year's enrolment reports, etc. The following material, however, addresses itself exclusively to the statistical sampling of BIU records to verify the year's enrolment reports.

What is required is a statistical sample of BIU records that will yield 95% sampling confidence that total BIUs reported on the year's enrolment reports have not been overstated by more than 2%.[4]

Since the objective of the audit test is to assess the frequency of net overstatements in total reported BIUs, the direction of the audit test must clearly be from the reported BIUs *back* to underlying enrolment records.

The first question is whether the auditor should select a random sample of students or a random sample of BIUs (in the former case every student would have an equal chance of selection while in the latter case every BIU would have an equal chance of selection). If the former method is chosen, the auditor will be able to arrive at a statistical conclusion that X% of the student records may contain BIU overstatements. The auditor will not, however, be able to convert this

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[4] With respect to the specific prescribed guidelines of 95% confidence and 2% upper error limit, the Ministry prescription requires only that these be applied to net overstatements. When, however, the auditor expresses an opinion that the "enrolment reports present fairly the weighted enrolment" he/she will normally want to be satisfied in any event that there is reasonable confidence that neither a material overstatement error nor a material understatement error exists. The procedures described in this appendix should usually be adequate to give such reasonable assurance with respect to understatements as well as overstatements.

conclusion into a rigorous statistical conclusion with respect to total BIUs themselves.

If the X% of overstated student records were or might be mostly graduate students, then total BIUs might well be overstated by far more than X% (since each graduate student overstatement might be an overstatement of several BIUs). It is possible that additional judgemental testing (particularly among graduate records) may still permit the auditor in such a case to arrive at a reasonable judgemental conclusion. Nonetheless, it is desirable, where feasible, to obtain a statistical conclusion directly relating to reported BIUs and this can be done by drawing a statistical sample of BIUs.

The first point is, therefore, that it is desirable for the auditor to draw a *random sample of BIUs*; that is, every BIU among the total reported BIUs should have an equal chance of selection in the audit sample.

Such a procedure will, for example, give somewhat more chance of selection to graduate students than to undergraduates but this is appropriate since, in terms of BIUs, each of the former has a greater potential for overstatement than each of the latter.

6.4 Mechanics of Drawing a Statistical Sample of BIUs

Pure random sampling involves making a new random draw on each selection. A far less cumbersome procedure, however, is to use 'systematic' or 'interval' sampling whereby the auditor selects every nth BIU throughout the population. This requires two things:

1. that the auditor can identify a set of BIU records (the 'population') that has been added (or will be added) and agreed (or will agree) in total to the total BIUs reported on the year's enrolment reports, and

2. that the auditor can by some method count through this population of BIUs in order to select every nth one.[5]

For example, if the total population amounts to 4,000 BIUs and the auditor has estimated that a sample of 400 BIUs would be needed (sample size determination is discussed below) then every 10th BIU throughout the entire population would be selected. The counting through the population to pick every 10th BIU may be able to be done manually (if the BIU records exist on visible accounting reports) or by computer (if the BIU records exist on computer files).

There is a risk that 'interval sampling' may contain a bias (if there is any periodicity or clustering in the pattern of errors throughout the population). For this reason, it is desirable for the auditor to use either 'randomly varying intervals' (the better method) or 'fixed intervals following several random starts'.

With the preferable method of 'randomly varying intervals' the auditor would use a stream of random intervals (obtained either from random number tables or a computer program) averaging to the desired average interval. For example, in the case above, if the auditor wishes 400 selections out of 4,000 BIUs then he or she needs to select at an average interval of 10, but the specific intervals would vary randomly above and below 10 (e.g. the auditor might count along 7 for the 1st selection point, another 15 for the 2nd, and so on). One method of obtaining varying intervals averaging to 10, for example, is to pick random numbers between 1 and 20 (twice the desired average interval), which, if enough are selected, will be bound to average to close to 10.

If, however, the auditor uses fixed intervals, he should take several random starts. One method (still using the above example) is to pick 3 random starts each between 1 and 30 at the very beginning of the population and then fixed intervals of 30 after each of these starts (producing in total a random start between 1 and 10 at the beginning of the population and then fixed intervals of 30 after each of these starts (producing in total about 400 selections). Another method is to pick a random start between 1 and 10 at the beginning of each third (or smaller division) of the population followed by fixed intervals of 10 thereafter throughout that division of the population. These methods are generally considered acceptable but the method of varying intervals described in the previous paragraph is to be preferred.

6.5 Evaluation of a Statistical Sample of BIUs

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[5] The mechanics of selecting every nth BIU are complicated if the BIU weights are applied manually at a summary level and are not readily available at a detail level. In some cases, this problem can be solved by stratifying the population into groups, students within each group having identical BIU weights. In a computerized system, however, these problems are not as great.

The evaluation of statistical samples will now be discussed and, following that, the planning of required sample size.

Suppose, temporarily, that a university consisted solely of students having 1 BIU each and that the only errors discovered by the auditor were instances where the student should not have been included at all (i.e. each discovered error represented a 1 BIU overstatement).

Statistical attribute sampling tables for 95% confidence (the confidence level prescribed by the Ministry) indicate the following:

For 95% confidence,[6]

Number of Errors Found In Sample	'Upper Error Limit Factor'
0	3.00
1	4.75
2	6.30
3	7.76
4	9.16
•	•
•	•
•	•

where:

'upper error limit' frequency = $\frac{\text{'upper error limit' factor}}{\text{sample size}}$

For example,

if 0 errors were found in a sample of 100,

$$\text{U.E.L.} = \frac{3.00}{100} = 3.00\%$$

if 1 error was found in a sample of 100,

$$\text{U.E.L.} = \frac{4.75}{100} = 4.75\%$$

if 3 errors were found in a sample of 400,

$$\text{U.E.L.} = \frac{7.76}{400} = 1.94\%$$

6.6. Evaluation for Varying Error Sizes

In practice, of course, a university does not consist solely of students having 1 BIU each but rather some having 1, some 4, some 2.5, etc. Suppose that, in drawing the statistical sample of BIUs, one particular BIU selected happens to fall within a student enrolment record for 4 BIUs. Of course, the auditor cannot verify merely the 1 BIU selected but rather must verify the whole student enrolment record of 4 BIUs. If this whole student record proves to be correct, then obviously the selected BIU therein must be correct too (and accordingly no sample error should be scored for this

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[6] This table is based on Poisson tables, and represents a slightly conservative (i.e., safe) approximation to Binomial tables (the rigorous values for attribute sampling from large populations). Additional conservatism arises when these values are used for very small populations (e.g., when 20% of the population has been covered in the sample) but the amount of this additional conservatism (from ignoring the "finite population correction factor") is slight. In any case, since both the above approximations are conservative, the values are safe for the auditor to use (i.e., if anything they will yield conclusions slightly more pessimistic than those the auditor is really entitled to as a result of sampling).

item).

On the other hand, if the whole student record proves to be fictitious then obviously the selected BIU therein is 100% fictitious too (and accordingly a sample error of *one* 100% fictitious BIU should be scored). If all selected BIUs turned out to be completely right or completely wrong then the table values above could always be used to project the 'upper error limit' of completely fictitious BIUs throughout the population (and this would represent the 'upper error limit' of overstatement in total reported BIUs).

However, in the above example, the auditor may find that the student enrolment record of 4 BIUs should properly have been recorded as 2 BIUs. In this case, the student enrolment record has been overstated by 50% of its reported value. It is logical then to consider each of the 4 reported BIUs (including the one selected BIU therein) as being "tainted" by a 50% overstatement error. In such a case, then, a sample error of *one* 50% overstated BIU should be scored.

6.7 Tainting Percentages Under 100%

How is such a 50% overstated BIU discovered as the only error, say, in a sample of 100 to be projected? Referring to the previous table, a sample of 100 containing 0 errors had a UEL of 3.00% while a sample of 100 containing 1 error had a UEL of 4.75%. It follows, in a sample of 100 containing no 100% errors and one 50% error, that 100% errors (0 found in sample) have a UEL of 3.00%, while 100% and 50% errors together (1 found in sample) have a UEL of 4.75%. It can be readily shown that the most conservative way of combining these two rigorous statistical conclusions is to attribute a 3.00% possible frequency to 100% errors and the remaining 1.75% possible frequency to 50% errors.

The net UEL would therefore be computed as follows:

Errors Found	Tainting 100%	UEL Incremental Factor	Product	Sample Size	Net UEL
0	100% x	3.00	= 3.00		
1st	50% x	1.75	= 0.88		
		4.75			
			3.88	÷ 100	= 3.88%

To permit such computation to be done when several different errors are found, a table of UEL incremental factors is desirable as follows:

For 95% confidence,[7]

Errors found in sample, ranked in declining tainting percentage	'Upper error limit' incremental factor
0	3.00
1st	1.75
2nd	1.55
3rd	1.46
4th	1.40
5th	1.36
6th	1.33
7th	1.30
8th	1.29
9th	1.27
10th	1.26
11th	1.24
12th	1.24
13th	1.22
14th	1.22
15th	1.21

where:

$$\text{'upper error limit' frequency value} = \frac{1}{\text{sample size}} \times (3.00 \times 100\% + 1.75 \times \text{tainting \% for 1st error} + 1.55 \times \text{tainting \% for 2nd error} + \text{etc.})$$

and where:

$$\text{tainting \% of an error} = \frac{\text{amount of error (in BIUs)}}{\text{reported BIUs for that student record}}$$

For conservatism, it is necessary to rank the errors in order of declining tainting % (as indicated above) since the UEL incremental factors are larger for the early errors. Note that the zero line is always scored at 3.00 x 100% since, even if no 100% errors are found in the sample, overstatement errors as large as 100% each (though no larger) could exist in the population.

6.8 Offsetting Overstatements and Understatements

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[7] This table represents merely the increments between successive values shown in the previous table. The derivation of the values is subject to the same technical note as Footnote 3.

The above method of evaluation by ranking tainting percentages is supported by Dr. Albert Teitlebaum of McGill University and also corresponds (except for differences in terminology) with that outlined in Chapter V of the Research Study, "Statistical Sampling in a Audit Context", published in March 1972 by the Canadian Institute of Chartered Accountants. It is possible to eliminate some of the conservatism inherent in this method by the use of a computer program, but such a refinement is usually not significant enough to be worthwhile.

The above procedures should be applied solely to errors of overstatement discovered in the audit sample. The logic is that individual errors of understatement cannot possibly aggravate any total overstatement and therefore in projecting individual errors of overstatement it is perfectly safe for the auditor simply to ignore any individual errors of understatement. If the gross UEL overstatements projected on the foregoing basis amounts to 2% or less then the auditor is in a position to give an unqualified opinion without consideration of the possible offsetting effect of any understatements.

Cases may arise, however, where the gross UEL of overstatements exceeds the 2% limit and yet it is most unlikely that the net overstatement could be this high because of the offsetting effect of understatement errors. I can be shown statistically that it is proper to deduct from the gross UEL of overstatement errors the MLE ('most likely error' rate) of understatement errors.[8]

The 'most likely error' of understatement (to be deducted above) is equal to the sum of the tainting percentages of individual understatement errors discovered in the audit sample divided by the sample size.

6.9 Summary of Evaluation Procedure

The above procedures can be summarized as follows:

6.9.1

After the BIU selection points have been identified throughout the population of reported BIUs, verify the student record in which selected BIU falls.

6.9.2

For each selected BIU determine a tainting % as follows:

$$\text{tainting } \% = \frac{\text{amount of error (in BIUs)}}{\text{reported BIUs for that student record}} \times 100\ \%$$

6.9.3

Rank the overstatement errors in order of declining tainting % and compute the gross UEL of overstatements as follows:

$$\text{Gross UEL of overstatements} = \frac{1}{\text{sample size}} \times (3.00 \times 100\ \% - 1.75 \times \text{tainting } \% \text{ for 1st error} - 1.55 \times \text{tainting } \% \text{ for 2nd error} - \text{etc.})$$

using the previous table.

6.9.4

Compute the most likely error of understatement as follows:

---

[8] For 95% confidence, this statement is rigorous for populations consisting of up to 3.6% overstatements offset by 1.6% understatements. Even for 6% overstatements offset by 4% understatements, the slight inaccuracy of the statement is not large enough to be of material consequence. Auditors should, however, avoid using the offsetting benefit of understatements when gross projected errors in both directions are each several times the 2% materiality limit.

$$\text{MLE of understatement} = \frac{1}{\text{sample size}} \times (\text{tainting \% for 1st error} + \text{tainting \% for 2nd error} + \text{etc.})$$

6.9.5

Compute upper error limit of net overstatement as follows:

Net UEL of overstatements = gross UEL of overstatements - MLE of understatements

6.9.6

Compare the net upper error limit of overstatements to the 2% materiality limit prescribed by the Ministry.

6.9.7

If the net UEL of overstatement is 2% or less, the auditor is in a position to give an unqualified opinion as far as this portion of the audit is concerned (although, of course, the results of other audit work such as the review of internal control, the reconciliation of academic fees, etc., must be assessed judgementally as well).

6.9.8

If, on the other hand, the net UEL of overstatement exceeds 2%, the auditor is not in a position to give an unqualified opinion. He should then consider the desirability of extending his sample size (this is discussed below). If, however, it seems clear that no amount of sample extension will lead to an unqualified opinion then he must report his findings to the Ministry.

6.10 Suggested Audit Working Paper

The audit working paper form (shown on the following page) can be used to record the statistical evaluation according to the foregoing procedures and contains an example to illustrate its use. In the example illustrated, the auditor discovered four overstatement errors and two understatement errors in the sample of 300 BIUs. The 'most likely' errors are 0.83% overstatements and 0.50% understatements, for a net 'most likely error' of 0.33% overstatements. The university records are *probably* overstated by only this small 0.33% rate. However, they *might*, subject to 95% confidence, be overstated by a net amount of as much as 1.83% (the net UEL of overstatement). Since this net UEL does not exceed the prescribed materiality limit of 2%, the auditor (subject to the completion and assessment of the other audit work: internal control review, academic fee reconciliation, etc.) is in a position to give an unqualified opinion. Had the net UEL, on the other hand, exceeded the 2% limit, the auditor would have had to consider the possibility of sample extension (discussed below).

6.11 Sample Extension

Suppose that in the foregoing example the auditor's sample of 300 had instead contained three 100% overstatement errors and no understatement errors. The statistical evaluation in this case would have worked out to the following:

$$\text{MLE of overstatement} : \frac{300\ \%}{300} = 1\ \%$$

$$\text{ULE of overstatement} : \frac{7.76}{300} = 2.59\ \%$$

Here the situation is that while the overstatement of reported BIUs is *probably* only 1% (which would be acceptable) it *might*, subject to 95% confidence, be as high as 2.59% (which is unacceptable). Based on the audit work done to date

the auditor is *not* in a position to give an unqualified opinion. On the other hand, there is a reasonable indication that the population error is not material (i.e. not as high as 2%) and that a larger sample size will be able to prove this. In such a situation the auditor should extend the sample size by drawing additional items from the population.

6.10.1 ILLUSTRATION OF ENROLMENT AUDIT WORKING PAPER TO EVALUATE STATISTICAL SAMPLE OF BASIC INCOME UNITS (BIUs)

Identification No. of Student Found to Contain BIU Errors	BIU As Reported	BIU Should Be	Amount Understated	Amount Overstated	Understatement Tainting % D/B * 100	Overstatement Tainting % E/B * 100	Rank of Overstatement Error (G) (In Declining Tainting %)	UEL Incremental Factor for This Rank of Error (per below)	Tainting % * UEL Incremental Factor (G * I)
A	B	C	D	E	F	G	H	I	J
-	-	-	-	-	-	-	0	3.00	3.00
A423	4	3	-	1	-	25%	4	1.40	0.35
F218	2	3	1	-	50%	-	-	-	-
L106	1	0	-	1	-	100%	1	1.75	1.75
M247	3	1.5	-	1.5	-	50%	3	1.46	0.73
R351	1	2	1	-	100%	-	-	-	-
S067	4	1	-	3	-	75%	2	1.55	1.16
				Totals	150%	250%			6.99
					+	+			+
					300	300	<-- SAMPLE SIZE-->		300
					=	=			=
					I Under	I Over			I
				'Most likely error' MLE	0.50%	0.83%		Gross UEL of Overstatement:	2.33%
						0.50%	--less MLE of Understatement:		0.50%
				Net MLE of overstatement:		0.33%		Net UEL of Overstatement:	1.83%
								compare to:*	I
								Prescribed materiality limit	2.00%

Factors for 95% Confidence	
Errors in Sample (Ranked in Declining Tainting %)	'Upper Error Limit' Incremental Factor
0	3.00
1st	1.75
2nd	1.55
3rd	1.46
4th	1.40
5th	1.36
6th	1.33
7th	1.30
8th	1.29
9th	1.27
10th	1.26
11th	1.24
12th	1.24
13th	1.22
14th	1.22
15th	1.21

*If net UEL of overstatement exceeds the materiality limit, the auditor must either:
(a) extend sample size and re-evaluate, or
(b) report why unqualified opinion is impossible.

Suppose the auditor draws an additional 300 BIUs and finds a further three 100% overstatement errors therein (the same error frequency as in the initial sample). The auditor now has a total sample of 600 BIUs containing six 100% overstatement errors. It is appropriate to evaluate this expanded sample of 600 in exactly the same way as already described. The statistical evaluation of the 600 sample would work out to the following:

$$\text{MLE of overstatement} : \frac{600\ \$}{600} = 1\ \$$$

$$\text{UEL of overstatement} : \frac{11\ .\ 85}{600} = 1\ .\ 98\ \$$$

It might be noted that the MLE of 1% has not changed but the UEL has been reduced from 2.59% to 1.98% and is now acceptable (as being less than the prescribed 2% materiality limit). Based on the expanded audit work now completed, the auditor *is* in a position to give an unqualified opinion (always subject to completion and assessment of other audit work: internal control review, academic fee reconciliation, etc.).

In general, extending the sample size should not be counted on to change the MLE (though in any particular case it may in fact change it either up or down) but it can be counted on to reduce the precision gap between the MLE and the UEL, and thus usually to reduce the UEL. A greater amount of audit work permits a more precise answer and so the precision gap between the MLE and the UEL is narrowed.

The UEL will of course always exceed the MLE (there will always be some precision gap however large the sample size). Therefore, if in the auditor's preliminary sample of 300 he/she had discovered seven 100% overstatement errors--for a MLE of 2.3% and a UEL of 4.4%--there is no point in the auditor extending the sample size. The MLE projected from any extended sample is likely to remain in the neighbourhood of 2.3% and the UEL will be even higher than this. There is, therefore, little prospect of bringing the UEL down to 2% and thereby obtaining an acceptable conclusion. Indeed, if the initial work indicates that a material error (over 2%) *probably does exist* and it is unlikely that extended work will provide 95% confidence that a 2% error does not exist, the auditor should not extend the sample but proceed immediately to report to the Ministry.

6.12 Guide as to Sample Extension

The following table can be used as a guide in deciding to what extent an initial sample should be extended (if any extension is appropriate at all).

For 95% confidence:[9]

Sample Size	Number of 100% overstatement errors found in sample (assuming no understatement errors found)	MLE(=sample error rate)	UEL
150	0	0.00%	2%
240	1	0.42	2
320	2	0.64	2
390	3	0.78	2
460	4	0.88	2
520	5	0.94	2
590	6	1.02	2
660	7	1.06	2
720	8	1.10	2
790	9	1.14	2
850	10	1.18	2

To use the previous example, if the auditor had found a 1% sample error rate in an initial sample of 300 (say, three 100% errors), it would be reasonable to extend the sample size to 590 (or about 600) since the above table shows that if the 1% sample error rate continues the same when one extends the sample (which is the most likely event) then a sample of 590 is needed before a sample error rate as high as 1% yields a UEL of the desired 2%.

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[9] This table is constructed from the previous tables to show what sample size and error combinations yield a 2% UEL.

Technically, the values shown are only rigorous for one-stage samples. Where a one-stage sample of 590 is found to contain 6 errors there is 95% confidence with respect to a 2% UEL. Where a sample of 590 however, is drawn in two stages (say, 240 first plus a further 350 later) with a possibility of stopping at the end of the first stage (in this case if only 1 error has been found in the first 240), it can be shown statistically that there is a slight fall-off in confidence level (in the range of a few percentage points). That is, if 6 errors are found in total in the two-stage sample of 590, there is not quite 95% confidence with respect to a 2% UEL as indicated above. However, it can be shown that in the range of sample extensions likely to be employed by auditors, such fall-off is slight. Considering the judgemental nature of a choice of 95% confidence in the first place, and the complexities of the statistical refinements necessary to obtain a perfectly rigorous answer, this slight statistical inaccuracy should not be considered of significance.

The above table can only, however, be an approximate guide because:

(a) the table is only in terms of 100% errors

- this gives the worst situation
- the situation is not as bad if an equivalent value of smaller errors is found instead
- for example, in a sample of 100, one 100% error yields an MLE of 1% and a UEL of 4.75%; however, two 50% errors yield an MLE of 1%, but a UEL of only 4.65%.

(b) the table is only in terms of overstatement errors

- the situation is slightly worse if the equivalent net value of sample errors is made up instead of offsetting overstatements and understatements
- for example, in a sample of 100, one 1% overstatement sample error frequency yields a UEL of 4.75%; however, a net 1% overstatement sample error frequency made up of 2% overstatements offset by 1% understatements yields a net UEL of 5.30%.

Nonetheless, use of this table will give a general indication of the extent to which the sample size should probably be increased. Of course, if the sample error rate found in the initial sample is, say 1.6%, it may be uneconomical to increase the sample (since a total sample of well over 1,000 items would be required) and a report under Item 1, paragraph 3 may be preferable.

Note that when a sample is extended, the results of the initial sample must not be discarded but rather incorporated into the total cumulative sample. The cumulative sample (initial stage plus extension) must then be re-evaluated using the same procedures as outlined previously.

If a sample is extended from, say 400 to 600, it is also important that the additional 200 selection points be drawn randomly out of the whole population. The mechanics of drawing the additional 200 items are the same as for the first 400 (except of course, a different average sampling interval is involved). In fact, if there appears to be a reasonable possibility that sample extension may be required, the full 600 points can be identified in the first place (to avoid the need to go back and count through the population of BIUs a second time). In such a case, the initial sample of 400 would be randomly selected out of the 600 identified selection points (perhaps by omitting every third one), the initial sample of 400 verified, and the additional 200 selection points only examined should the initial sample of 400 prove unacceptable.

6.13 Planning the Initial Sample Size

The same table presented above as a guide for sample extension can also be used for planning the initial sample size. Referring to this table, it is clear that the initial sample must be no less that 150 items (since a sample of 150 items barely yields a 2% UEL if *no* sample errors are found). It would, however, generally be imprudent to choose an initial sample size as low as 150 since at this size the discovery of even one error, however small, will render the conclusions unacceptable and necessitate sample extension.

Previous years' audit results will obviously be the best guide. For example, if past sample error rates have varied between 0 and 0.6%, a sample size of about 300 would seem a prudent choice. Of course, there is always the chance that the current year results may turn out worse and the 300 prove inadequate. In such a case, however, the auditor can proceed to extend the sample size (rather than examining an excessive sample size to start with).

It should be stressed that while estimating the required sample size is always an uncertain business (involving, as it does, the anticipation of what sample error rate may be encountered), this uncertainty does not attach to the final statistical evaluation. Once a sample has been chosen, verified, and the sample error rate determined, an objective statistical conclusion can be drawn based on the evaluation procedures described earlier.

6.14 Summary of BIU Statistical Sampling Steps

The above procedures for conducting a statistical sample of BIU records can be summarized as follows:

6.14.1

Based on prior years' observed error frequencies (or any indications of the current year's frequency) choose an adequate sample size (greater than 150) by reference to the sample extension guide.

For example, if prior years' observed error frequencies have been in the range of 0 to 0.6%, an initial sample size of about 300 would usually be a prudent choice.

6.14.2

If there is a reasonable possibility that subsequent sample extension might prove necessary, choose (by reference to the guide) a gross sample size larger than in 6.14.1 above. Determine all the gross sample selection points by counting through the BIU population, either manually or by computer (see above discussion on sampling mechanics). Select the initial sample (6.14.1) out of the gross sample selection points (e.g. by selecting every other one, or every third, etc.).

6.14.3

Verify the initial sample and determine the tainting percentages of any individual errors of overstatement or understatement discovered therein.

6.14.4

Compute the statistical conclusion arising from the initial sample results by completing the audit working paper (referenced in item 6.10). Compare the net 'upper error limit' of overstatement to the prescribed 2% materiality limit.

6.14.5

If the net UEL of overstatement does not exceed 2%, the auditor is in a position to give an unqualified opinion (subject to the completion and assessment of other audit work: internal control review, academic fee reconciliation, etc.).

6.14.6

If the net UEL of overstatement exceeds 2%, but the net MLE of overstatement is significantly less than 2% (say, not much in excess of 1%) then there is every indication that an acceptable conclusion will be able to be reached through sample extension. Based on the sample error rate observed in the initial sample, and by reference to the sample extension guide, choose the extended sample size likely to be required.

6.14.7

Select additional sample items randomly (either from the population directly or from the additional gross sample selection points already held in reserve in 6.14.2) to increase the cumulative sample size up to the extended size chosen in 6.14.6. Verify these additional sample items. Re-evaluate the whole extended sample by re-completing the audit working paper. Compare the new net 'upper error limit' of overstatement to the prescribed 2% materiality limit. The process of sample extension can be continued in this manner until an acceptable conclusion is reached or until it becomes evident that no acceptable conclusion is possible.

6.14.8

Where the MLE of overstatement (of either the initial or extended sample) exceeds 2% or where it is only slightly under 2% (e.g., 1.6%, 1.8%, etc.) it is unlikely that any acceptable conclusion will be able to be reached through sample extension (or further sample extension). The auditor should therefore report her/his findings in such a case to the Ministry as called for in item 1, paragraph 3.

6.15 Investigation of the Nature of Errors Discovered

This appendix has been directed exclusively to the drawing of a statistical conclusion based on the frequency of errors observed in a sample of BIUs. None of the statistical work should, however, limit the auditor from evaluating judgemental any other evidence available from his/her audit work. In particular, it is desirable that the auditor investigate the *nature* of any errors discovered in the audit sample. If any errors discovered in the sample appear to be *systematic* in nature, the auditor may well wish to perform additional judgemental audit steps to assess the likely extent of such systematic errors, over and above the statistical sample projections of upper error limits.

6.16 Combination with Other Audit Conclusions

The statistical projections described in this appendix relate to the projection of a possible error frequency among the population of BIU records and the comparison of this upper error limit with the 2% materiality guideline. Of course, if other known errors are discovered outside the BIU records being subjected to sampling, the effect of these known errors should be added to the statistical 'upper error limits' and the total compared to the 2% materiality guideline. For example, if an overstating addition error of 0.5% was discovered in the summarization of the total BIU figure reported on the enrolment reports and, on top of this, the statistical upper error limit for overstatements among the individual BIU records was 1.9%, the total combined 'upper error limit' would be 2.4% (and hence unacceptable without further work).

6.17 Other Considerations

A number of other considerations may well arise in the conduct of any particular enrolment audit. For example, in some universities the net 'weighted enrolment' is reduced by certain cost-sharing percentages related to affiliated colleges. These cost-sharing percentages are themselves subject to audit and such audit may likewise be performed using statistical sampling procedures. In the latter case, it is desirable that the statistical conclusions regarding the gross reported BIU's and the statistical conclusions regarding the cost-sharing percentages be combined before comparison with the prescribed 2% materiality limit.

A discussion of this and other considerations is, however, beyond the scope of this appendix. The auditor who has had some training in statistical sampling techniques will be able to resolve such matters when they are encountered.

7.1 COUNTING OF GRADUATE STUDENTS: EXAMPLES SHOWING AUDIT IMPLICATIONS

Section	Evidence Required	Possible Audit Test Procedures
4.2.5.2(b)	Program of studies meets requirements of O.C.G.S. appraisals procedure	Where applicable, examine evidence of successful program appraisal
4.2.5.2(d)	No units have been claimed for students who are registered but inactive	Obtain certificate (see form, item 7.2, next page)
4.5.1 (1)	Student has an honours undergraduate degree or equivalent	Examine transcript or other documentary evidence
4.5.1 (2)	Student is making substantial demands on resources of the university	Obtain certificate (see form, item 7.2, next page)
4.5.2 (2)	Student identifies him/herself as a full-time graduate student	This should be verified by reference to student records (statement of intent, etc.)
4.5.2 (4)	Student claimed as full-time geographically available and visits campus regularly	" " " " " "
4.5.5	Minima and maxima provisions have been adhered to	(a) Examine, on a test basis, units claimed during the academic year under these provisions (b) Assess the adequacy of records and procedures for the correct determination of these claims
General	Adequate records and procedures have been established for the counting of graduate students for entitlement purposes	Review of internal control

7.2 COUNTING OF GRADUATE STUDENTS - CERTIFICATION (SAMPLE)

CERTIFICATION OF GRADUATE STUDENT STATUS AND ELIGIBILITY FOR FORMULA OPERATING GRANT SUPPORT

To: _____
(Name of Auditors)

Term of 19___ 19___ Session _____

Name of Student: _____

Claimed for Support: _____ Program of Study: _____

Status reported: ☐ Full-time ☐ Part-time

		Yes	No
(i)	This student made substantial demands upon the resources of the university (see Section 4.5.1(2)), i.e., either the student was registered in a regular course of study or was actively engaged in writing a dissertation under continuing supervision.	☐	☐
(ii)	For students accorded full-time status (Section 4.5.2):		
	(a) Apart from approved absence (see item b) was student geographically available and did he or she visit the campus regularly?	☐	☐
	(b) If the student was absent from the university for a period exceeding four weeks, was such absence approved as required?	☐	☐

8. STUDY ABROAD PROGRAMS AND COURSES

(To be submitted for audit purposes by responsible Deans to Registrar)

1. University offering program/course _____
   Fiscal Year_____

2. Name of program/course _____

3. Category: ☐ Study abroad program
   ☐ Study abroad course
   ☐ Exchange program (under formal agreement)

4. When recognized by Senate for credit? _____ Ref: _____

5. Designed as an integral part of what degree program?

6. Program level (year of study):

7. Length of program/course (in weeks): _____ From _____ To _____

8. What is the duration of the program/course in student contact hours?

   Is this at least equal to the contact hours for comparable programs/courses (specified below) offered on campus in Ontario during the same sessions? ☐ Yes ☐ No

9. Courses offered abroad: _____
   (Course Name) *(Number)*

10. Location offered (country/city):

11. In what year was this program/course started?

12. If started before 1981, was MTCU approval for formula funding obtained?

13. Briefly explain why a foreign locale is essential for this program/course.

14. If this is an exchange program under the terms of a formal exchange agreement give:

    (a) Name and date of agreement:

    (b) A brief description of its terms:

    (c) Name of (each) other participating university:

    (d) Number of foreign students in Canada on this exchange (append list of their names)

    (e) Number of students from your university abroad on this exchange (append list of their names)

    (f) Number of FTE's claimed for formula grants

    (g) Number of BIU's claimed for formula grants

8. STUDY ABROAD (Continued)

15. If this is not an exchange program give:

(a) Number of Ontario students enrolled in this study abroad program or course who have registered in Ontario at university (*append list of their names*).

(b) Have all of the above:

(i) enroled for credit in degree programs described in their Ontario university's official calendar?
☐ Yes ☐ No

(ii) been assessed the regular academic fee for their study abroad program/course?

☐ Yes ☐ No

(iii) received instruction abroad paid for by their Ontario university?

☐ Yes ☐ No

(iv) together generated no more formula income for their Ontario university than twice its direct costs?

☐ Yes ☐ No

(Exclude from grant claim any students with "no" answers, noting which they are on appended list).

(c) Number of FTE's claimed for formula grants

(d) Number of BIU's claimed for formula grants

(e) 50% of (BIU's x current BIU value of $ _____) =

(f) Man-years of teaching given (based on an Ontario faculty member's normal annual load) by:

(i) Ontario university's regular faculty

(ii) Other faculty specifically retained by Ontario university for program/course

(g) Direct costs of program/course (formula-eligible expenditures only):

Teaching (attributable salaries & benefits _____
Other instructional costs _____
Physical facilities _____
Supplies and equipment _____
Other (specify) _____
Total (equal to 15(e) or greater) _____

_____ _____ _____ _____
Signature (*Responsible Dean, or equivalent*) Date Reporting Officer Date

9. Procedures To Be Used in Connection with International Student Tuition Fees

Section 5.1.3 provides a description of the policy regarding the application of international student tuition fees. Effective 1996-97, government funding for the majority of international students was discontinued and tuition fees were deregulated. Grandparenting provisions apply to international students enrolled in 1995-96. These provisions are outlined in Section 5.1.3. In addition, certain categories of international students, outlined in Section 4.1.3, may qualify as eligible for government funding purposes and these students should be charged a maximum of the domestic fee rate.

With regard to grandparented international students and international students who are claimed as eligible for government funding under Section 4.1.3, institutions are expected to have documented procedures in place and implemented that will substantiate the student's grandparented or eligible funding status. These procedures are to be made available to the institution's external auditors. The auditor's reporting in respect of these international students must:

- verify that tuition fees have been charged and students reported appropriately; and
- reference and attach a copy of the procedures, provide concurrence (or otherwise) as to the acceptability of the procedures, state whether examination was made in accordance with generally accepted auditing standards and accordingly, include such tests and other procedures as considered necessary in the circumstances and express an opinion as to whether or not the institution has complied with the referenced procedures.

APPENDIX 5.1.1

ONTARIO UNIVERSITY STANDARD FEE SCHEDULE
1997-98/1998-99 - REGULAR FEES

UNDERGRADUATE (TWO TERM FEE)

Group 1:	Standard Fee: $1,575
Technology (Lakehead)[a]	

Groups 2 & 3:[b]	Discontinued

Group 4:	Standard Fee: $2,034
Dental Hygiene (Technology) Nursing Technology	

Group 5:	Standard Fee: $2,386
Agriculture Arts & Science (Toronto) Arts & Science (1st Year, Trent) Arts, General & 1st Year Honours Arts, Upper Years Honours Commerce & Business Administration: **Additional Cost Recovery Prog -'98/99 (2nd Entry)** Conversion Engineering (Lakehead) Diploma Public Health Nursing Education Environmental Studies Fine & Applied Arts Forestry Household & Food Science Journalism Law **(Additional Cost Recovery Program - 1998-99)** Library Science Music Nursing Ontario College of Art and Design Programs (Formerly Group 3) Pharmacy **(Additional Cost Recovery Program - 1998-99)** Physical & Health Education Physio & Occupational Therapy Preliminary Year Pre-medicine Secretarial Science Science General & 1st year Honours Science, Upper years Honours Social Work, 1st year Social Work, Upper years Theology Veterinary Medicine **(Additional Cost Recovery Program - 1998-99)**	

continued...

APPENDIX 5.1.1 (CONTINUED)

ONTARIO UNIVERSITY STANDARD FEE SCHEDULE
1997-98/1998-99 - REGULAR FEES

UNDERGRADUATE (TWO TERM FEE)

Group 6:(c)	Standard Fee: $2,591
Architecture Engineering Landscape Architecture Industrial Design Optometry **(Additional Cost Recovery Program - 1998-99)**	

Group 7:(d)	Standard Fee: $3,035
Dentistry **(Additional Cost Recovery Program - 1998-99)** Medicine **(Additional Cost Recovery Program - 1998-99)**	

GRADUATE (ONE TERM FEE)

All Programs	Standard Fee: $1,198

(a) Not all standard fees for institution-specific programs are listed. Please refer to the *"Essential Notes and Reporting Instructions"*, produced by the ministry, for a detailed breakdown of institution-specific standard fees.

(b) Group 2 (Ryerson-specific fee category) and Group 3 (OCAD-specific fee category) have been discontinued.

(c) Group 6 fees apply to all programs in the group, with the exception of the Optometry program at Waterloo, for which an additional $1,000 may be charged on top of the standard fee including the discretionary component.

(d) Standard fees are applied to Group 7 programs, except for the residency years of Oral Surgery and Oral Pathology and Medical Interns and Residents, to which a zero standard fee applies.

APPENDIX 5.1.2.2

ONTARIO UNIVERSITY REGULAR (DOMESTIC) TUITION FEE RATES (STANDARD AND TOTAL INCLUDING DISCRETIONARY COMPONENT)

Fee Category [1]	1997-98			1998-99 [5]		
	Standard Fee	With Average Discretion of 35.3%	With Maximum Discretion of 59.6%	Standard Fee	With Average Discretion of 48.83%	With Maximum Discretion of 75.56%
Undergraduate (Two Term Fee)						
Group 1: Technology (Lakehead)	$1,575	$2,131	$2,514	$1,575	$2,344	$2,765
Group 4: Dental Hygiene Tech. Nursing Technology	$2,034	$2,752	$3,246	$2,034	$3,027	$3,571
Group 5: Arts Science, etc.	$2,386	$3,228	$3,808	$2,386	$3,551	$4,189
Group 6: [2] Architecture Engineering, etc.	$2,591	$3,506	$4,135	$2,591	$3,856	$4,549
Group 7: [3] Dentistry [4] Medicine	$3,035	$4,106	$4,844	$3,035	$4,517	$5,328
Graduate (One Term Fee)						
All Programs	$1,198	$1,621	$1,912	$1,198	$1,783	$2,103

1. Group 2 (Ryerson-specific fee category) and Group 3 (OCAD-specific fee category) have been discontinued. Also, see Appendix 5.1.1 for a more detailed breakdown of programs within each fee category.

2. Group 6 fees apply to all programs in the group, with the exception of the Optometry program at Waterloo, for which an additional $1,000 may be charged on top of the standard fee including the discretionary component.

3. Medical Residents and Oral Surgery/Pathology students pay no fees.

4. For their Doctor of Dental Surgery program, Toronto and Western were permitted to increase the standard fee including the discretionary component by an additional amount of up to $4,000, beginning with students entering September,1996.

5. In 1998-99 the following programs were eligible for addition cost recovery: Business/Commerce (2nd Entry), Dentistry, Law, Medicine, Optometry, Pharmacy and Veterinary Medicine.

APPENDIX 5.2

PART A

CERTIFICATION OF COMPULSORY ANCILLARY FEES CHARGED TO STUDENTS

(UNIVERSITY LETTERHEAD)

To: The Director
Universities Branch
Ministry of Training, Colleges and Universities
9th Floor, Mowat Block
Queen's Park, Toronto
M7A 1L2

This is to certify that $_____ was collected during the academic year 19__/19__ from students registered at *(name of institution)* in the form of compulsory ancillary fees. All these fees are non-tuition-related **compulsory ancillary fees**, as defined in Section 5.2 of *The Ontario Operating Funds Distribution Manual*, with the exception of the fees outlined below:

We understand that any revenue collected for tuition-related compulsory ancillary fees or for compulsory non-tuition-related ancillary fees which contravenes the provisions of Section 5.2 in *The Operating Funds Distribution Manual* will be deducted from the operating grant to *(name of institution)*.

_____
Executive Head
(Name of Institution)

_____
Chairperson, Board of Governors
(Name of Institution)

APPENDIX 5.2

PART B - SECTION I
REQUIREMENTS FOR PROTOCOLS - COMPULSORY NON-TUITION-RELATED ANCILLARY FEES

GENERAL

- In order to accommodate the introduction of the protocol process, an optional two-stage approach was developed to give both institutions and students greater flexibility.
- Compulsory non-tuition related ancillary fees are to remain at 1993-94 levels unless a protocol is in place.
- An institution's governing body may not unilaterally change the text of a protocol agreed to by its administration and student government representatives, but shall refer any concerns back to those who developed the text.
- In the event that an eligible student government chooses not to nominate a representative for the purpose of developing a protocol, the written support of that student government is not required for the approval of the long-term protocol. However, the terms of the protocol will still affect the students represented by the non-participating student government.
- Institutions with a multi-campus facility may wish to have multiple protocols documents to address the different compulsory non-tuition related ancillary fee configurations at their institution.
- A review process may be provided for within a protocol(s).

INTERIM (or FIRST STAGE) PROTOCOL

The option of an interim protocol was developed to permit fee increases or new compulsory fees for 1994-95 only.

There was no requirement to have an interim protocol.

This alternative approach allowed increases or new compulsory fees for 1994-95 provided that:

- the institution's administration and student government representatives reached agreement on the text of an interim protocol recognizing that the methods used for student input for these purposes would not prejudice the development of a long-term (or second stage) protocol;
- the students eligible to participate in the development of an approval of an interim protocol included all student government representatives. Other student representatives may also have participated in the development of an interim protocol with the concurrence of the administration and student government representatives.
- student agreement to the interim protocol was obtained through, at minimum, the support of the majority of student governments involved in the development of the protocol, who in turn, served on behalf of the majority of students paying compulsory non-tuition-related ancillary fees;
- written support from student government representatives for an interim protocol should have been obtained in compliance with the ministry's compulsory ancillary fee policy;

An interim protocol had the approval of the institution's governing body.

APPENDIX 5.2, PART B - SECTION I (CONTINUED)

While an interim protocol should not prejudice the development of a long-term (second stage) protocol, it can be used to facilitate the development of a long-term protocol. This approach requires the agreement of both the institution's administration and student government representatives.

LONG-TERM (or SECOND STAGE) PROTOCOL

A long-term (or second stage) protocol will come into affect provided that:

- the institution's administration and student government representatives reach an agreement on the text of a long-term protocol;
- the students eligible to participate in the development and approval of a long-term protocol include all student government representatives;
- the administration and the student government representatives jointly identify representative(s) to be involved in the development and approval of a long-term protocol when there are students who pay compulsory non-tuition related ancillary fees who are not represented through any of the institution's student's governments;
- student agreement to the long-term protocol is obtained through, at minimum, the support of the majority of students involved in the development of the protocol who, in turn, serve on behalf of the majority of students paying compulsory non-tuition-related ancillary fees;
- the long term protocol has the approval of the institution's governing body.

APPENDIX 5.2

PART B - SECTION II

EXAMPLES OF COMPULSORY NON-TUITION-RELATED ANCILLARY FEES THAT MIGHT BE REQUIRED FOR INCLUSION IN PROTOCOL

1. HEALTH/INSURANCE FEES

2. STUDENT ACTIVITY FEES

   Student activity fees are those fees, the revenue from which is not applied to the costs of instruction in any course or program normally offered for credit toward an eligible degree, diploma or certificate, but is applied to the costs of enhancing the cultural or social or recreational life of the students, or to provide other non-academic services to students. This definition excludes academic services such as library, computing and learning centre services.

3. ATHLETIC FEES

   Athletic fees are those fees, the revenue from which is not applied to the costs of instruction in any course or program normally offered for credit toward an eligible degree, diploma or certificate, but is applied to the costs of providing athletic or recreational services to student or the costs of athletic associations or the costs of institutional athletic teams.

4. TRANSPORTATION/PARKING FEES

5. HOUSING PLACEMENT FEES

   Institutions may charge compulsory ancillary fees for the total costs of placing students in housing.

Note: In some cases, these or other compulsory non-tuition-related fees may be combined into a single student service fee. Such combination fees are also examples of a fee which might be incorporated in a protocol.

APPENDIX 5.2

PART C

FEES FOR FIELD TRIPS, MATERIALS AND SERVICES WHICH ARE EXEMPTED FROM SECTION 5.2.7

1. FIELD TRIP FEES

   Institutions may charge a compulsory ancillary fee for the reasonable, direct costs of travel and accommodation of students on compulsory field trips. Compulsory ancillary fees cannot be charged for such things as salaries and benefits or travel and accommodation of faculty, or for any specific tuition-related activities for any compulsory field trips.

   Compulsory ancillary fees cannot be charged for any component of out-of-province compulsory field trips in compulsory courses (as defined in Section 5.2.2). [Exemptions may be granted by the ministry for reasonable costs of compulsory out-of-province field trips in compulsory courses for institutions located near inter-provincial or international borders.]

2. FEES FOR LEARNING MATERIAL AND CLOTHING RETAINED BY THE STUDENT (E.G., DENTAL KITS)

3. FEES FOR MATERIAL USED IN THE PRODUCTION OF ITEMS WHICH BECOME THE PROPERTY OF THE STUDENT

4. FEES FOR MATERIAL OR SERVICES WHERE THE INSTITUTION ACTS AS A BROKER WITH A VENDOR FOR THE STUDENT

   These are fees paid by students to the university which do not produce net revenue for the institution but instead are set and levied through an agreement with a vendor. In these cases, the institution is neither the manufacturer nor supplier of the material or service being purchased. Similarly structured fees, where student governments serve in the "broker" role, are considered student government fees -- see Section 5.2.8 (i).

APPENDIX 5.2

PART D

ELIGIBLE COMPULSORY NON-TUITION-RELATED ANCILLARY FEES ASSOCIATED WITH WORK TERM PLACEMENTS

Institutions may charge compulsory ancillary fees for the total costs of placing students in jobs for work terms. The following types of costs will be considered eligible for coverage:

i) placement-service costs including:

- salaries and benefits of that portion of each position directly related to the provision of placement services and work-term activity, including such positions as placement directors, officers, assistants and administrative and support staff; and

- non-salary expenditures attributable to the provision of placement services and work-term activities including travel, telephone, mailing/postage, printing, photocopying, publicity, computing, equipment and furnishing, supplies and expenses, and external meetings, etc.; and

ii) maintenance costs of space used for placement service, including costs of utilities, custodial service and security of this space. Eligible space should include:

- the space used for administrative and professional placement staff; and

- interviewing or meeting rooms used in the placement function.

The costs of space used for part of the time for other purposes should be adjusted according to the proportion of usage for placement service.